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EXAMINER

LAZORCIK, JASON L

ART UNIT	PAPER NUMBER
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1731

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/823,665	Applicant(s) YAMAMURA, WAICHI	
	Examiner Jason L. Lazorcik	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Preliminary Remarks

Applicant is advised that the grounds of rejection utilized in the following Office Action are essentially equivalent to the previous Office Action dated December 28, 2006. Any deviations noted between the previous and instant Office Action are merely intended to clarify the Examiners position regarding the claimed invention in view of the cited prior art.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2 and 3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants newly added limitations restricting the temperature and pressure of the steam "when being applied against the ground surface of the glass body" appear to be unsupported by the specification as originally filed. Specifically, Applicants specification (¶[0018] and [0026]) provides general support for the claimed steam conditions;

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"In the practice of the invention, it is preferred that the steam used is one which has a temperature within a range of 120 to 160.degree. C. and a vapor pressure within a range of 0.27 to 0.62 Mpa"

Since the condition or quality of the steam is reasonably expected to change at various points through the process, the specification does not explicitly provide support for the condition of the steam as "applied against the ground surface of the glass body".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 1, 4-6, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipp (4,175,942) in view of Applicants admitted prior art (Page 1, line 11 to Page 2, line 10)

Applicant's specification teaches several key elements outlining the "usual practice" in the art of drawing optical fibers or "smaller-sized glass rods" from a glass rod or a "glass body having a cylindrical form" (also held equivalent to the claimed "glass preform" as per **Claim 10** or "glass ingot" as per **Claim 11**).

Applicants' specification specifically discloses that "the usual practice" in forming a smaller-sized glass rod from a glass matrix comprises;

1. "mechanically process a glass matrix into a perfectly round, cylindrical body by means of a cylindrical grinder"
2. After grinding rinsing the cylindrical body with water and further subjecting said body "to chemical treatment such as with a hydrofluoric acid solution" or an aqueous solution of an alkali or acid (Japanese Laid-open Patent Application no. 58-217442)
3. "soften the body by application of heat", and
4. "elongate the softened body into a glass rod of high circularity"

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The specification further teaches that it is known in the art that mechanical processing of a glass body as indicated above by means of a cylindrical grinder results in “surface roughness ... involving microcracks therein” or alternatively in “fixed grains on the surface thereof” as set forth in **claim 4**.

From Applicants above disclosure, it is accepted by the Examiner that essentially every element of at least **claims 1, 4, 5, 10, and 11** is considered old and well known in the art to one of ordinary skill except for the step of “applying pressurized steam to surfaces of said glass body”.

Lipp teaches a method of drawing a “ribbon, sheet, rod, tubing or other shapes” by “reheating of a shaped glass piece to a semi-molten condition and stretching that portion in the heated zone to attenuate the same to the desired dimension and shape.” The Lipp disclosure would be readily appreciated by one of ordinary skill as analogous in scope and content (e.g. forming a small glass rod by elongation of a glass matrix) to Applicants admitted prior art process.

Lipp establishes a process optimization between furnace temperature, drawing tension and drawing speed.” The reference continues by indicating that it is desirable to decrease the processing temperature in an effort to optimize process economics, however such a change in process conditions results in an increase in glass viscosity and an increase in the required drawing tension. Further, the reference teaches that

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“due to the increase in the glass viscosity” at the lower process temperatures, “the drawing tension is often increased to the point where the freshly formed glass is overstressed resulting in breakage” (Column 1, Lines 5-42). Lipp then teaches that the problem of breakage can be virtually eliminated by introducing steam or water vapor into the atmosphere surrounding the glass while it is being formed.

Lipp is silent regarding the preliminary processing of the shaped glass piece or glass body used for the formation of the smaller-sized glass rod. Applicants admitted prior art establishes the “usual practice” for providing this glass body. Specifically, according to the admitted prior art, it would have been obvious to one of ordinary skill knowledgeable in the “usual practice” to provide said glass body by grinding a glass matrix into a perfectly round, cylindrical body followed by a subsequent and optional treatment in an aqueous solution of an alkali or acid.

Since Applicant teaches that glass bodies processed according to the usual process routinely display “surface roughness ... involving microcracks therein”, it would have been obvious to “apply pressurized steam to the surface of said glass body” at least during the drawing step as taught by Lipp. The pressurized steam application would have been an obvious modification over the “usual practice” of drawing a glass fiber to one of ordinary skill in the art seeking to minimize glass breakage during said drawing operation.

Claim 12 is rejected under 35 U.S.C. 103(a) as obvious over Lipp as applied to Claim 1. In the instant case, Claim 12 is drawn to a glass rod made by the process set forth for the manufacture a glass rod as outlined in Claim 1. As such, Claim 12 amounts to a product-by-process claim for the processes set forth in Claim 1.

In the event any differences can be shown for the product-by-process claim 12, as opposed to the product taught by the Lipp reference, such differences would have been obvious to one of ordinary skill in the art as routine modification of the product in the absence of a showing of unexpected results, see *In re Thorpe*, 227 USPQ 964 (CAFC 1985). As the afore mentioned claim is a product by process claim, it is deemed that "[A]ny difference imparted by the product by process claims would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicants to establish that their product is patentably distinct, ..." *In re Brown*, 173 USPQ 685, and *In re Fessmann*, 180 USPQ 324. Further, "[P]rocess limitations are significant only to the extent that they distinguish the claimed product over the prior art product." *In re Luck*, 177 USPQ 523 (1973).

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipp (4,175,942) and admitted prior art as applied to claim 1 under 35 USC 103(a) and in further view of the teachings of Charles (3,275,470).

Lipp teaches that treating the glass preform with steam during the drawing process significantly reduces breakage of the glass during the elongation step. Said reference further teaches that the exposure to steam should be performed at an elevated temperature of ~880-900°C during the draw process. As such, it fails to explicitly set forth a process wherein the steam is applied to the preform in a temperature or pressure range as set forth in Claims 2 and 3.

Charles teaches that it is known to immerse glass rods into a hydrofluoric acid bath or “an aqueous solution of an acid” to etch away surface damage in an effort to increase the “rupture strength” or mechanical durability of said rods. Charles further teaches that although the solution treatment provides some measure of strengthening, it is preferred to also treat the body in an atmosphere containing 80 percent to 100 percent saturated steam. The reference indicates that providing such a treatment with steam in the temperature range between about 190°C to 260°C provides a substantial and enduring increase in the material strength (Column 21, Lines 29-64).

In the absence of any substantially unexpected results to the contrary, the applicants steam conditions of between 120 and 160°C are understood to be encompassed by the range of about 190°C to 260°C as set forth by the Charles process. Further, where Charles teaches a saturated steam vapor pressure (e.g. 100 percent saturated) and applicants claimed pressure range of 0.27 MPa to 0.63 MPa simply represents 100 percent saturated steam in the claimed temperature range of

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between 120°C to 160°C, said pressure range is deemed prima facie obvious over the prior art teaching.

In summary, it would have been obvious to one of ordinary skill in the art at the time of the invention according to the Charles teachings to treat the surface roughened glass rod to an aqueous acid solution after cylindrical grinding in order to etch away the surface damage and to provide a nominal increase in the material strength. Further, it would have been obvious to one of ordinary skill to perform the steam treatment after the acid treatment in order to provide an enduring increase in the strength of the glass body. Both of these treatments would have been obvious modifications to the prior art teachings in order to decrease the risk of glass breakage during the drawing process as indicated in the prior claim rejections.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipp (4,175,942) and admitted prior art as applied to claim 1 under 35 USC 103(a) and in further view of apparatus as taught by Brauer (6,715,317).

While the prior art apparatus as presented above fails to explicitly teach the detailed nozzle structure or motion as set forth in the instant claims, Brauer figure 2 shows that a gas/fluid applicator of the claimed geometry glass fiber drawing applications where eliminating ovalities is desired. The reference further indicates (Column 4, Lines 58-63) that it is advantageous for the gas distribution to be movable

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along the longitudinal axis of the preform. It would have therefore been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus as taught by Lipp with the structural details as taught by Brauer in order to minimize oval deformation in the drawn fiber.

Response to Arguments

Applicant's arguments filed April 20, 2007 have been fully considered but they are not persuasive. Specifically,

1. Applicant argues that Claim 1 is revised to include the step of "applying pressurized steam to the surface of the ground glass for cleaning" and that such a process is not taught by Lipp. Applicant continues by asserting that "the steam or water vapor is used in (the Lipp) reference as part of the atmosphere but not to remove dust from the glass surface after grinding".
2. Applicant further asserts that "the rejection fails to take into account that the steam, now pressurized, is applied to the thus ground surface prior to the heating step"

Examiner Disagrees with the above arguments on the grounds that both of the above arguments appear directed to particular features which are neither explicitly nor inherently reflected in the instant claim language.

Specifically, the Examiner has found no basis in the claim language support the argument wherein Applicants steam treatment is applied "for cleaning" the ground glass nor that said treatment necessarily results in the removal of dust from the glass surface. Similarly, Examiner has found no explicit basis to restrict the application of steam to the ground glass surface "prior to the heating step".

Therefore, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Additionally, Examiner disagrees with Applicants assertion that the Lipp steam application does not result in the alleged surface cleansing action. Specifically, Applicant has provided no conclusive evidence in support of this assertion and it follows that these arguments are held to be mere conjecture and attorney argument. The Official policy regarding Attorney argument is clearly outlined in MPEP §2145 [R-3];

"Attorney argument is not evidence unless it is an admission, in which case, an examiner may use the admission in making a rejection. See MPEP § 2129 and § 2144.03 for a discussion of admissions as prior art. The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness."). See MPEP § 716.01(c) for examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration.

3. Applicant then argues that "there is clearly no step of grinding the surface of the glass and applying pressurized steam to remove the dust from grinding."

Examiner disagrees with the basis of Applicants argument.

The instant rejection of Claim 1 is based upon the combined teachings of Lipp in view of Applicants admitted prior art under 35 U.S.C. 103(a). Therefore in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642

F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

4. Applicant argues that Lipp “offers no guidance regarding the steam or water vapor parameters” and that the Charles steam conditions are at much lower temperatures than the furnace temperature conditions utilized in the Lipp steam treatment. From these two points, Applicant concludes that “the two (processes) are totally unrelated” and that “the Examiner has no basis to pick a temperature from the process of Charles and attempt to stuff it into the process of Lipp”.

Examiner strongly disagrees.

It appears that Applicant has misconstrued the basis under which the Charles reference was applied to modify the Lipp disclosure. First, Charles indicates that providing the glass rod with a treatment with steam in the temperature range between about 190°C to 260°C after immersion in “an aqueous solution of an acid” provides a substantial and enduring increase in the material strength (Column 21, Lines 29-64).

The Lipp reference is fundamentally concerned with minimizing or eliminating breakage of the glass rod during the drawing process. One of ordinary skill in the art would clearly recognize the advantage treating a glass rod with steam

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according to the Charles process (much like the hydrofluoric acid etch step in Applicants admitted prior art). Like the acid dip performed upon the ground glass cylinder, the Charles steam treatment at lower processing temperatures would be performed in addition to the high temperature steam treatment disclosed by Lipp and not in replacement thereof. As specifically set forth above, it would have been obvious to one of ordinary skill to perform the Charles steam treatment after the acid treatment in order to provide an enduring increase in the strength of the glass body.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Japanese Patent Abstract Publication number 10-226529 appears to read upon at least the claim 1,4,5,6,10,11, and 12 under 35 U.S.C. 103(a) in view of Applicants admitted prior art as applied above.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the


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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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